

COMPLETE LISTING OF ALL CLAIMS

Kindly amend claims , and as shown in the listing of claims below. This listing of claims will replace all prior versions, and listings of claims in the application.

1. 1. (currently amended) A method for infiltrating an organic material into spaces in one or more nanostructures, comprising:
 - 3 disposing the organic material proximate the nanostructures; and
 - 4 infiltrating the organic material into the spaces in the nanostructures by exposing the organic material to a solvent vapor.
- 1 2. (original) The method of claim 1 wherein disposing the organic material proximate the nanostructures includes disposing a layer of a polymer process solution on a nanostructured template.
- 1 3. (original) The method of claim 2 wherein the nanostructured template has spaces between about 5 nm and about 1000 nm wide.
- 1 4. (original) The method of claim 2 wherein the spaces in the nanostructured template include tubes between about 1 nm and about 1000 nm in diameter with a tube density between about 10^{12} tubes/m² and about 10^{16} tubes/m².
- 1 5. (original) The method of claim 1, wherein the nanostructures include one or more nanopores, cavities, or interstitial spaces between pores, tubes or rods.
- 1 6. (original) The method of claim 5 wherein disposing the organic material proximate the nanostructures includes mixing the nanotubes into a polymer process solution.
- 1 7. (original) The method of claim 1 wherein the organic material is a small molecule.
- 1 8. (original) The method of claim 1 wherein the organic material is a pigment, dye or fullerene.
- 1 9. (original) The method of claim 1 wherein the organic material is a polymer.
- 1 10. (currently amended) The method of claim 9 wherein the polymer includes one or more polymers selected from the group of poly(phenylene) and derivatives thereof, poly(phenylene)

3 vinylene) and derivatives thereof (e.g., poly(2-methoxy-5-(2-ethyl-hexyloxy)-1,4-phenylene
4 vinylene (MEH-PPV), poly(para-phenylene vinylene), (PPV)), PPV copolymers,
5 poly(thiophene) and derivatives thereof (e.g., regioregular poly(3-octylthiophene-2,5,-diyl),
6 regioregular, regiorandom poly(3-octylthiophene-2,5,-diyl), regiorandom, poly (3-
7 hexylthiophene) (P3HT), regioregular poly(3-hexylthiophene-2,5-diyl), regioregular,
8 regiorandom poly(3-hexylthiophene-2,5-diyl)), regiorandom), MDMO,
9 poly(thienylenevinylene) and derivatives thereof, and poly(isothianaphthene) and derivatives
10 thereof, tetra-hydro-thiophene precursors and derivatives thereof, poly-phenylene-vinylene
11 and derivatives organometallic polymers, polymers containing perylene units,
12 poly(squaraines) and their derivatives, discotic liquid crystals polyfluorenes, polyfluorene
13 copolymers, polyfluorene-based copolymers and blends, [[e.g.]] polyfluorene-based
14 copolymers co-polymerized and/or blended with ~~materials such as~~ charge transporting
15 compounds and/or light absorbing compounds, [[(e.g.)]] polyfluorene-based copolymers co-
16 polymerized and/or blended with tri-phenyl-amines and derivatives[[]]], and/or light-
17 absorbing compounds (e.g. polyfluorene-based copolymers co-polymerized and/or blended
18 with fused thiophene rings and derivatives, generally hetero-atom ring compounds with or
19 without substituents[[]]), and/or fullerenes, dyes or pigments.

- 1 11. (currently amended) The method of claim 10 wherein the solvent vapor includes chloroform
2 is selected from the group of acetone, chloroform, benzene, cyclohexane, dichloromethane,
3 ethanol, diethyl ether, ethyl acetate, hexane, methanol, toluene, xylene, mixtures of two or
4 more of these, and derivatives of one or more of these.
- 1 12. (original) A method for making an optoelectronic device, comprising:
2 providing a nanostructured template having spaces between one or more nanostructures;
3 infiltrating an organic material into the spaces by disposing the organic material proximate
4 the nanostructures and exposing the organic material to a solvent vapor; and
5 placing the nanostructured template and or organic material in electrical contact with an
6 electrode.
- 1 13. (original) The method of claim 12 wherein disposing the organic material proximate the
2 nanostructures includes disposing a layer of an organic process solution on a nanostructured
3 template.

- 1 14. (original) The method of claim 12 wherein the spaces in the nanostructured template include
- 2 tubes between about 1 nm and about 1000 nm in diameter with a tube density between about
- 3 10^{12} tubes/m² and about 10^{16} tubes/m².
- 1 15. (original) The method of claim 12 wherein the organic material includes small molecules.
- 1 16. (original) The method of claim 15 wherein the small molecules include pentacene or
- 2 pentacene precursors.
- 1 17. (original) The method of claim 12 wherein the organic material is a pigment, dye or
- 2 fullerene.
- 1 18. (original) The method of claim 12 wherein the organic material is a polymer.
- 1 19. (currently amended) The method of claim 18 wherein the polymer includes one or more
- 2 polymers selected from the group of poly(phenylene) and derivatives thereof, poly(phenylene
- 3 vinylene) and derivatives thereof (e.g., poly(2-methoxy-5-(2-ethyl-hexyloxy)-1,4-phenylene
- 4 vinylene (MEH-PPV), poly(para-phenylene vinylene), (PPV)), PPV copolymers,
- 5 poly(thiophene) and derivatives thereof (e.g., regioregular poly(3-octylthiophene-2,5,-diyl),
- 6 regioregular, regiorandom poly(3-octylthiophene-2,5,-diyl), regiorandom, poly (3-
- 7 hexylthiophene) (P3HT), regioregular poly(3-hexylthiophene-2,5-diyl), regioregular,
- 8 regiorandom poly(3-hexylthiophene-2,5-diyl), regiorandom), MDMO,
- 9 poly(thienylenevinylene) and derivatives thereof, and poly(isothianaphthene) and derivatives
- 10 thereof, tetra-hydro-thiophene precursors and derivatives thereof, poly-phenylene-vinylene
- 11 and derivatives organometallic polymers, polymers containing perylene units,
- 12 poly(squaraines) and their derivatives, discotic liquid crystals polyfluorenes, polyfluorene
- 13 copolymers, polyfluorene-based copolymers and blends, [[e.g.]] polyfluorene-based
- 14 copolymers co-polymerized and/or blended with ~~materials such as~~ charge transporting
- 15 compounds and/or light absorbing compounds, [[(e.g.)]] polyfluorene-based copolymers co-
- 16 polymerized and/or blended with tri-phenyl-amines and derivatives[()]], and/or light-
- 17 absorbing compounds (e.g. polyfluorene-based copolymers co-polymerized and/or blended
- 18 with fused thiophene rings and derivatives, generally hetero-atom ring compounds with or
- 19 without substituents[()]], and/or fullerenes, dyes or pigments.

1 20. (original) The method of claim 12 wherein solvent vapor is selected from the group of
2 acetone, chloroform, benzene, cyclohexane, dichloromethane, ethanol, diethyl ether, ethyl
3 acetate, hexane, methanol, toluene, xylene, mixtures of two or more of these, and derivatives
4 of one or more of these.